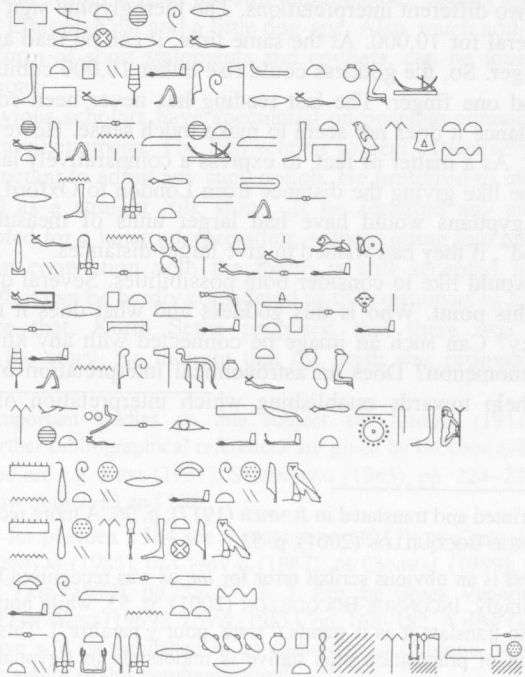


A Goddess Rising 10,000 Cubits into the Air ... Or Only One Cubit, One Finger?

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My starting point will be a hieroglyphic inscription from the temple of Philae. This temple is situated in the very south of Egypt, near the first cataract of Aswan. The temple was built and decorated mainly during the Ptolemaic period, in the Hellenistic age. Naturally, this does not preclude the use of older texts as models for the inscriptions. However, I will postpone questions of dating and first present the actual inscription.

The inscription is placed in the great hypostyle hall of the temple. It is not part of an offering scene, but stands as a so-called monograph.¹ The hieroglyphic text is:



¹ A text giving fundamental information about the specific theology and mythology of a locality.

Translated, it runs as follows:²

“(This district ...), it is called Per-Mereret.
It is the place where Shu and Tefnut stopped
when they came northwards from Bugem
while a great flame was around her.
She burned the enemies of her father Re.
She went up into the sky 10,000 cubits and immediately became peaceful.
Then Shu said to Tefnut,
when he had seen her making a great massacre among the rebels:
‘May you remain, may you remain there,³
may you be risen, may you be risen there,
may you remain in Elephantine,
may you remain there,
may you be risen in Bigge,
you who have kindled⁴ a torch against all enemies of Ptah in Memphis at the
[first] time.’”

On the whole, the translation does not present too many difficulties. However, there is one particular point which should be further commented on. Above, I have translated the measure of distance as 10,000 cubits. Unfortunately, the orthography is susceptible to two different interpretations. The hieroglyphic sign of the finger  is the ordinary numeral for 10,000. At the same time, it can be read as a measure, i.e. the width of a finger. So, the goddess could rise either 10,000 cubits into the sky or just one cubit and one finger. The last reading has never been considered before because at first glance it does not seem to make much sense. However, it cannot be excluded offhand. As a matter of fact, to express a comparatively large distance just in cubits would be like giving the distance from London to Oxford in yards instead of miles. The Egyptians would have had larger units of measurement at hand, especially the “rod”, if they had wished to give larger distances.

Therefore, I would like to consider both possibilities. Several questions have to be answered at this point. Who is this goddess and what does it mean that she is rising into the sky? Can such an image be connected with any kind of observable astronomical phenomenon? Does an astronomical interpretation of the underlying myth give any help towards establishing which interpretation of the number is correct?

² The text was printed and translated in JUNKER (1917), p. 96. A more recent translation can be found in INCONNUE-BOCQUILLON (2001), p. 53.

³ The *r* in the text is an obvious scribal error for *im*, as was recognised by JUNKER (1917), p. 96 n. 3. Surprisingly, INCONNUE-BOCQUILLON (2001), p. 53, while noting that the text is corrupt, still tries to translate it as it stands (“reste, pour y paraître”). This is not acceptable, for the construction of preposition plus stative is impossible in Egyptian grammar. In my translation, I have replaced the Egyptian abbreviation “twice” by really repeating the text intended to be read twice.

⁴ Following Junker, I interpret *stj.t* as a participle. The position of Inconnue-Bocquillon that this is an infinitive serving as heading of a ritual text, while syntactically possible, does not make much sense in this context.

The goddess in this inscription is called Tefnut. Together with her brother Shu who is also mentioned in the text, she is the child of the primeval god Atum, a manifestation of the Egyptian solar god. The mythology connected with her includes one highly relevant point for the inscription in question: The goddess has become separated from her father and dwells far away in the southeast in the country called Bugem. Her brother Shu, together with Thot, the god of wisdom, tries to bring her back to Egypt and to her father. After many delays and problems, they manage to do this. The text I am discussing here describes one stage of this return journey.

The final meeting of the goddess with her father takes place in Memphis, which is also mentioned in our inscription. While some texts simply dwell on the happy reunion of the family, others add a more dramatic point. The children of the sun-god are supposed to fight against the enemies of their father. This aspect is highlighted at two points in our text. On the one hand, the killing of the enemies takes place at Bigge, just south of the Egyptian border, just before the goddess reaches Egypt. On the other hand, it is combined with Memphis, the place of the final meeting with the sun-god.

This complex myth is normally designated, in Egyptological research, as the myth of the far-away goddess, though "home-coming goddess" would be nearer to the truth.⁵ The most complete narrative about it is found in a very long Demotic text known by its modern title "Myth of the Eye of the Sun", found in at least six different papyri of which several are still unpublished.⁶ In this text, the protagonists are given as an Ethiopian cat and a little dog-ape. Also, much additional information, mostly in the form of short statements and epithets, can be found in Hieroglyphic temple inscriptions.

Several previous scholars have speculated on possible connections between this myth and natural phenomena. The first scholar to deal extensively with it, Hermann Junker, was reluctant to admit any such notion. He preferred to interpret it on a very simplistic level as a straight folk story.⁷ If he admitted any astronomical reality behind it, he opted for a lunar interpretation, without going into any details.⁸ Such an interpretation in connection with the moon is still accepted nowadays in some quarters,⁹ though it can be hardly considered as the *consensus* of Egyptology.

Even before that, Kurth Sethe proposed that there was a meteorological background to the story. He thought that the myth was prompted by dark clouds

⁵ The most important studies on this subject are JUNKER (1911); JUNKER (1917); SETHE (1912); further bibliographical references are given by INCONNUE-BOCQUILLON (2001), p. 9f.; to be added are e.g. KEES (1931); STERNBERG (1985), pp. 224–228; ENDRÖDI (1992); for more, see below note 9, 13 and 15f.

⁶ Text editions for pLeiden I 384 see SPIEGELBERG (1917); DE CENIVAL (1988); for pLille dem. 31 see DE CENIVAL (1985), DE CENIVAL (1987); DE CENIVAL (1989); for pTebtunis Tait 8 see TAIT (1974); TAIT (1977), pp. 35–37, T. 3. For the Greek Version of pBM 274, see REITZENSTEIN (1923); WEST (1969); TOTTI (1985), pp. 168–182. A new German translation of the whole narrative will be published in an anthology of Demotic literature by Friedhelm Hoffmann and the author of this communication.

⁷ JUNKER (1917), p. 129f.

⁸ JUNKER (1917), pp. 166–168.

⁹ Most explicitly DERCHAIN (1971), p. 12f. and pp. 36–44; DERCHAIN (1972), p. 45; DERCHAIN (1978), p. 51, n. 2; VERHOEVEN (1986).

temporarily covering the sun; the absence of the sun was interpreted as absence of the goddess.¹⁰ This idea has been so conclusively criticised by others¹¹ that it does not need much more comment.

There is, however, another astronomical interpretation that, at least temporarily, has gained acceptance. It goes back to a passing idea offered by E. Schwarze and reported by Wilhelm Spiegelberg.¹² According to this theory, the apparent movement of the solar orbit during the different seasons should be the cause of the religious myth of the absence of the goddess. Though Spiegelberg never elaborated the details of this interpretation and did not stake his reputation on it, somehow it became the standard opinion of Egyptologists¹³ and got included in the most important reference tools.¹⁴

An alternative solution connected the return of the goddess with the arrival of the Nile inundation in Egypt.¹⁵ This has not been elaborated in much detail, but the most interesting fact about it is that several scholars have mentioned the intimate connection between the heliacal rising of Sirius and the beginning of the inundation.¹⁶

Here, I would like to recall my own proposal offered some years ago. I pointed out that it made sense to understand the return of the goddess as a mythical interpretation of the heliacal appearance of the star Sirius after its period of invisibility.¹⁷ I referred to an inscription indicating that the goddess appeared in the horizon behind Orion,¹⁸ but had to postpone a detailed discussion for further studies. Meanwhile, an important step forward has been made by Alexandra von Lieven. Working with my proposed model, she was able to develop meaningful interpretations for several cosmological inscriptions in the temple of Esna, which allude to the myth of the return of the goddess.¹⁹

Although it is impossible to give a complete demonstration within the limited frame of this publication, I would like to indicate at least some of the more relevant texts and arguments in order to provide my case with a better foundation. Some general discussion of earlier research also seems in order.

The theory of the inundation obviously cannot explain many details of the myth. Most relevantly, the very text I am discussing here clearly states that the goddess is

¹⁰ SETHE (1912), p. 38.

¹¹ See e.g. JUNKER (1917), p. 165f.

¹² SPIEGELBERG (1915), p. 877, n. 1; SPIEGELBERG (1917), p. 2.

¹³ The most important recent proponents were BARTA (1969), p. 77; BRUNNER-TRAUT (1980), p. 34; VAN DIJK (1983), p. 240; KURTH (1983), pp. 161–163 and n. 4; KURTH (1982–1983), p. 73; GRAEFE (1984), p. 903f.; STERNBERG (1985), pp. 224–228.

¹⁴ E.g. BONNET (1952); OTTO (1975); SMITH (1984).

¹⁵ SAUNERON (1962), p. 58f.; and especially DESROCHES-NOBLECOURT and KUENZ (1968), p. 115f.; DESROCHES-NOBLECOURT (1993), pp. 28 and 42; accepted by POSENER-KRIÉGER (1976), p. 447f.; BARGUET (1977), p. 20; GERMONT (1989), p. 227.

¹⁶ GERMOND (1989), pp. 194–196 and 224–233; NAGUIB (1990), pp. 37–48; see also KESSLER (1988), p. 183.

¹⁷ QUACK (1995), p. 116, note k.

¹⁸ QUACK (1995), p. 109, n. 14.

¹⁹ VON LIEVEN (2000), p. 75; VON LIEVEN (2001).

rising in the sky. This does not make sense with the water of the Nile inundation. This might rise 16 cubits above zero-level, but neither 10,000 cubits nor 1 cubit, 1 finger into the sky. I believe that the inundation-theory mistakes an incidental part of the whole situation for the basic core.

As the goddess is always designated as the daughter of the sun-god to whom she returns, any interpretation identifying the goddess herself with the sun runs into serious trouble: one sun would have to play two roles at once.

The interpretation of the goddess as the moon faces a similar dilemma. One of the two gods responsible for bringing her back is, after all, the god Thot, who is a typical lunar deity.²⁰ Besides, in Egypt the moon is always connected with male gods.²¹ It can be clearly seen in some texts that specific points in the phases of the moon are significant for the return of the goddess in an ideal schema,²² but they never go so far as to indicate that the goddess herself is the moon.

If, however, the goddess is Sirius, everything fits together. The lunar figure is a companion of the goddess watching over her punctual arrival. The father is the sun, and his meeting with his daughter would be a most appropriate expression of the heliacal rising of the star.

A more detailed study of this problem would have to include the astrological ideas about the horoscope of the world as exposed in Greek and Latin texts²³ and, incidentally, depicted on the ceiling of the hypostyle hall in Dendera.²⁴ In this model, the world is born when the horoscope (ascendant) is in Cancer, in the eleventh hour of the night when Sirius is at the horizon. The moon either stands also in Cancer (as indicated by Firmicus Maternus), directly beside Sirius. Then he can be just a small sickle because the sun, standing in Leo, is rather close by. Or, as shown on the ceiling of Dendera, he is in his *hypsoma* in Taurus, three signs away from the sun which means that he is about the sixth or seventh day of the Egyptian lunar cycle. This is all the more important as several Egyptian sources connect the festival of the return of the goddess with the feast of the sixth day of the lunar month.²⁵ For a complete elucidation, further studies will be necessary.

Summing up, the essential situation of the myth shows clearly that sun and moon have to assume roles different from the goddess herself, but their presence would tally very well with interpreting the goddess as Sirius. One additional detail in favour of this interpretation is that according to all clear-cut geographical indications, the goddess is coming from the south-east.²⁶ This is the direction in which the newly rising Sirius becomes visible from Egypt while it would not really fit either the sun

²⁰ All citations from the demotic text given by JUNKER (1917), p. 167f. in favour of his interpretation, as a matter of fact, connect the moon not with the goddess herself but with Thot or other male gods.

²¹ This has clearly been stated by WESTENDORF (1989), p. 89 against the lunar interpretation of Tefnut by Verhoeven.

²² The best cases can be found in the inscriptions from Kom Ombo.

²³ BOUCHÉ-LECLERCQ (1899).

²⁴ A fuller discussion of this will be included in my forthcoming work on the Egyptian decans.

²⁵ The references are given by BARTA (1969), p. 75f.

²⁶ JUNKER (1917), p. 80f.

or the moon. Furthermore, it is frequently stated that the goddess comes as a head-ornament, or a snake on the brow of her father. Such a model, implying the presence of the goddess just before her father, corresponds very well to the rising of Sirius just before the sun. Some other texts, especially from the temple of Esna, say that the sun-god is snatching the light of the goddess, and such a mythological statement is visibly connected with the rising sun outshining the star.

Now I will give some citations from Egyptian texts to support this model even further. I begin with two examples from the Demotic text.²⁷ This is by far the longest and most coherent account of the myth. The goddess says:

“You are a baboon with his bow, so that you are like Sothis who has created those who have created us. I am the noble male vulture of the lord of Thebes, i.e. the vulture on whose body no male happens.”

This is commented by

“she compares herself to Neith, because she is the one who came into being without anyone creating her [...], the one who brought herself into being, who is Sothis before whom all things are done, and who, also, is the year. If people are intending to make the word “year” in writing they should use a vulture for it. It is her who has created the month because she is the primordial goddess who has created everything on earth. Everything came forth from her. He has arrived at making the goddess appear in the form of an amulet for the year. A female baboon is what he has used for that. He hung the bow into the sky and the arrows are her stars” (Mythus Leiden 9, 6-15).

At first glance, this passage might seem like complete gibberish. However, it becomes much clearer on closer examination. The one trying to bring the goddess back to Egypt is a form of the god Thot, and Thot often has the form of a baboon. The baboon is, of course, the dog’s-ape. There is attestation, especially from Greek treatises of the non-Greek constellations, that there was the constellation of an ape- or dog-headed figure with a bow belonging to the paranatellonta of Leo. So we have, indeed, a baboon with his bow in the sky, rather close to Sirius. On the other hand, the goddess Sothis, the Egyptian form of Sirius, can sometimes be represented in the late period as shooting arrows, mainly because of a connection with Satis. Obviously, the purpose of this passage is to bring the two protagonists of the demotic text in intimate connection with figures of the starry sky, and at the same time to create a model of their close relationship.

Another passage from the Demotic text might seem even more straightforward. The little dog-ape offers a hymn:

“May the sky carry a wind from the north
and may it bring the scent of Punt up with it.
May the inundation flow before it.
May the sun appear in the morning,

²⁷ Compare the editions by SPIEGLEBERG (1917) and DE CENIVAL (1985). For reasons of space, I have refrained from giving also the Demotic text.

being a sun-disc with large flame.
 May his looks be joyful
 and his rays endowed with life,
 without any clouds on the way of Sothis.
 May her rays be within the circle of Egypt,
 may she throw them against the Nubian countries”
 (Mythus Leiden 16, 4-8).

This describes the ideal situation around the date of the heliacal rising of Sirius. A period of prolonged north wind is traditionally connected with the beginning of the inundation.²⁸ This is the time when Sirius, coming from the south-east, starts to become visible again in Egypt. So, my interpretation that the myth of the return of the goddess is the mythical picture of the heliacal rising of the Sirius fits very well.

Lack of time prevents me from dwelling on all aspects of the myth in the temple inscriptions. Still, I will discuss one specific text from the temple of Philae. There, it is said about the dangerous goddess Sakhmet:

<i>wnn šhm.t wsr.ti m snm.t hr</i> <i>šnwḥ sbi.w m hh=š pri=š m nšr.t</i> <i>r p.t ḥpr rn=š pw n špt.t</i>	“Sakhmet is powerful in Bigge while burning the enemies with her flame. She came forth as fire-serpent into the sky, and so her name ‘Sothis’ came into being” (Philae I, 69, 6-9).²⁹
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The connection with our starting point is obvious. Again, we have the goddess furious and burning the enemies in combination with an ascent into the sky. In addition, we are given one further detail. The name of the goddess while rising into the sky is explicitly given as Sothis, and this is the Egyptian name for Sirius.

By now, it should be reasonably clear that the goddess rising into the sky is, indeed, a mythological model connected with the heliacal rising of Sirius. We can, however, still proceed a bit further. A characteristic incidence of the return of the goddess is the fact that she becomes furious,³⁰ or more specifically, burns the enemies of her father. However, afterwards her fury is quenched and she is cooled down, or it is said that she becomes peaceful and joyous. How would this fit with Sirius?

In order to solve this problem, we have to take the symbolic meaning of colours in Egypt into account. Wrath and fury against enemies are always combined with the hot colour red, while the cool colours green and blue are connoting peace, joy and harmony. Here, we have to remember an astronomical fact. When rising directly in the horizon, Sirius appears red, due mainly to the influence of the atmosphere and its dust.³¹ After climbing up a bit more, it assumes its normal white-blue colour. Given

²⁸ AUFRÈRE (1991), p. 248.

²⁹ Also translated by INCONNUE-BOCQUILLON (2001), p. 83.

³⁰ See, for this, e.g. the text given by JUNKER (1917), p. 111 with the interpretation given by QUACK (1993), p. 76f., but unfortunately overlooked by INCONNUE-BOCQUILLON (2001), p. 27.

³¹ See, for this LEITZ (1993).

the attitude of the Egyptians towards these colours, it is hardly surprising that they should interpret this change of colour as turn from a furious to a peaceful mind. So, this detail about our inscription also fits within the framework of my general model.

That brings us finally back to the question of the measurement. As I have mentioned, the goddess rises up into the sky to a height of either 10,000 cubits or just one cubit, one finger. Two questions arise: does this exact indication fit with the general model, and is a decision between the two options possible?

If we want to connect the cubit-measurement in any way with some sort of measurement in the sky, we have to look for other possible references in more or less astronomical contexts. There is one Egyptian testimony which might be of some help for applying measurements to the sky. The netherworld guide "Amduat" – the Book of What is in the Netherworld – describes the circuit of the sun within the twelve hours of the night. For the second and third hour, it is specifically indicated that the sun traverses 309 Iteru within it. The Iteru is the largest distance measurement known in Egypt. It corresponds to what the Greeks called "Schoinos" and it has a normal distance of about 10.5 kilometers.³² This is most probably the equivalent to 20,000 cubits. If we suppose that this is the normal velocity of the sun according to Egyptian conceptions, we can compare it with our inscription.

The result would be quite devastating: the goddess rises only by one 618th part of the distance that the sun covers in one hour. Transferred in angular measurements, the sun covers 15° in an hour, so the goddess would rise by only 1 minute and about 27 seconds of the arc; it would remain almost stable near the horizon. Such a result does not make sense. How can we explain the failure?

One solution would be that the two different values are simply on different levels and not meant to be compared on the same scale. Another solution is that the 10,000 cubits are not meant to be any specific value. They may only indicate that the goddess rises quite a bit up into the sky. Finally, there remains the third possibility, and that is to explore possible meanings of the alternative reading 1 cubit 1 finger.

At first sight, this seems even more disappointing than the other value. Such a distance could easily be managed by an ordinary human jumping. Still, I would like to mention something which seems all the more appropriate as this is a joint conference on Egypt and Mesopotamia. As is well known, in Mesopotamian astronomy the cubit measure was used for measuring angular distances in the sky.³³ One cubit corresponds to either 2° or 2;30°. One finger is 0;05°. If we apply such a value to the Egyptian indication, we would get about 2;05° or 2;35°. Especially the last value seems not too bad, as the measurement of 2;30° for one cubit was far more usual. Such an angular distance does not seem unreasonable. It is a noticeable rise above the horizon but not very high up into the sky. It would just fit with the short distance a star can cover on its heliacal rising before becoming extinct by the sun's light.³⁴

³² SCHLOTT-SCHWAB (1981), pp. 118–122.

³³ See most recently HUNGER and PINGREE (1999), pp. xiv and 147. Cf. also GRASSHOFF (1999), pp. 137–139 and FATOOGHI and STEPHENSON (1997–1998), pp. 210–214.

³⁴ As a reaction to my original lecture, Dr. T. de Jong was kind enough to calculate Sirius risings for Memphis and Philae at the times around 300, 600, and 1500 BC for four-year-sequences. The minimal altitude of Sirius, in those cases, was just 2.3 degrees, while 2.5 degrees (or 2;30°) is not infrequent. The mean altitude for Philae is mostly 2.6 degrees

There is one more point. As already said, Sirius can appear quite red and this would be associated with the fury of the goddess. Such a redness, according to modern observations, can happen up to about 3° above the horizon.³⁵ This would not be too far from the value we get when interpreting the Egyptian inscription by Mesopotamian angular measurements; and thus, the point in the sky where the goddess becomes peaceful would be about the point where Sirius ceases to appear reddish to the observer. Of course, all this might be just a strange coincidence, but it does not seem useless to test it.

Now, it is time to summarize. The myth of the return of the goddess has a distinct astronomical background. It is a description in mythological terms of natural phenomena associated with the heliacal rising of Sirius. Such a result shows quite clearly that research on Egyptian astronomy cannot afford to concentrate on “pure” scientific texts while neglecting the religious background. Rather it is typical for the Egyptians that astronomical background is presupposed in religious texts.

For the particular inscription indicating how much the goddess went up into the sky, we are still facing two alternatives. Either we read it as 10,000 cubits; then we cannot pinpoint any specific meaning for the number. Or we read it as 1 cubit 1 finger; then, by applying measuring units otherwise only attested for Mesopotamia,³⁶ we can reach a result which tallies reasonably well with the facts about the heliacal rising of Sirius. This should make it acceptable, at least as a working hypothesis.

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(around 300 BC it is 2.7°) which is $2;36^\circ$ – almost exactly the value of the Egyptian inscription if read as one cubit, one finger and interpreted by the Mesopotamian measuring conventions. The value for Memphis is quite similar, normally about 0.1 degrees higher.

³⁵ LEITZ (1993), p. 153.

³⁶ In an unpublished astrological text from Tebtunis, a “cubit” is mentioned, but the context is not sufficiently well established to ascertain that the cubit is used as an angular measurement.

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